

CLAIMS

1. A thermostat device, incorporated within a valve housing provided with a cooling water passage that constitutes a cooling water channel of an internal combustion engine, having a built-in thermally expansive body that is thermally expanded or contracted by change of temperature of the cooling water, and comprising a piston rod that is slid by thermal expansion/contraction of this thermally expansive body, wherein a valve body is subjected to opening/closing operation with respect to a valve seat formed within said valve housing by sliding of said piston rod in accordance with change of volume of said thermally expansive body,

the thermostat device being characterized in that the valve seat shape further on the downstream side in the direction of flow of the cooling water than the valve seat where said valve body is seated, which is an internal wall face forming the cooling water passage within said valve housing, is formed in a shape such that, in the valve open condition, the cross-sectional area of the passage that is formed between the inlet seal of the valve seat on which said valve body is seated and the top face of the valve body gradually decreases on the cooling water inlet side with reference to the maximum passage cross-sectional area on the upstream side in the direction of flow of the cooling water, and such that the [cross-sectional] area of the passage at the face perpendicular to the top face gradually increases on the cooling water outlet side so that cooling water flows along the top face of said valve body.

2. The thermostat device according to claim 1, characterized in that said valve housing comprises a plurality of support legs that support a thermoelement in which said thermally expansive body is sealed, and

cooling water passages are formed in some of these support legs along the direction of flow of the cooling water.

3. The thermostat device according to claim 1 or 2, further comprising a frame member that supports a thermoelement in which said thermally expansive body is sealed, and characterized in that a hole for passage of cooling water is formed in the bottom face of this frame member.

4. The thermostat device according to claim 1, 2 or 3, characterized in that, at the top face of said valve body, a taper-shaped section is formed that forms a tapered face such that the central section thereof is elevated around the periphery of a thermoelement.